REMARKS

Claims 1, 2, 4-20 are in the case; Claims 19 and 20 have been withdrawn as being directed to non-elected species.

Applicant's would like to thank Examiner Dang for the helpful discussion with Applicant's representative on August 24, 2004. It is believed agreement was reached that the claims as amended herein are allowable over the art of record. The following discussion is intended to summarize and elaborate upon the remarks made by Applicant's representative during the aforementioned discussion.

The present inventors have surprisingly discovered that olefin feedstocks comprising sulfur impurities maybe oligomerized without deactivating the catalysts by providing a catalyst that converts both the olefins and sulfur moieties into the oligomers.

Mazurek et al., U.S. 4,788,376, hereinafter Mazurek, teaches at column 1, line 62+, as follows:

> **Specifically, the process of the invention comprises either contacting the contaminated lower olefin at oligomerization conditions with a mixture of oligomerization catalyst and at least one of a metathesis catalyst and an alkaline earth oxide, or precontacting the contaminated lower olefin at metathesis conditions with metathesis catalyst ..... and subsequently oligomerizing the lower olefin.**

Thus, Mazurek teaches using either a catalyst system requiring an alkaline earth oxide or using a two step process to oligomerize. In contrast, the present claims are directed *inter alia* to using a catalyst consisting essentially of a metal

component selected from specified transition metals to provide for oligomerization of both olefin and sulfur moieties in one step.

Norris, U.S. 5,157,201, hereinafter Norris, does not cure the deficiencies of Mazurek. Norris is directed to desulfurizing feedstock - see e.g., col. 1, lines 47-50. The reference teaches an invention wherein "metal oxides are used to **absorb** sulfur from a propylene/propane stream .... " (col. 6, line 10+; emphasis added). While "cobalt oxide, molybdenum oxide, and nickel oxide .... as well as mixtures [thereof]" are used in the invention, they are used to remove sulfur components from the hydrocarbon stream by absorbing the sulfur species. Oligomerization of the olefinic species occurs using a phosphoric acid catalyst (see, e.g., column 7, line 2). In contrast, the present claims are directed *inter alia* to using a catalyst consisting essentially of a metal component selected from specified transition metals to provide for oligomerization of both olefin and sulfur moieties in one step.

Thus, *neither* reference suggests using the catalyst system claimed herein to provide for the claimed oligomerization of both olefin and sulfur moieties. The combination of the references thus also fails to suggest the invention.

Both references require catalyst systems more complex than the present invention and precluded by the present claim language, which requires a catalyst system consisting essentially of a metal component selected from selected transition metals and wherein both olefin and sulfur species are oligomerized. The language "consisting essentially of" is well-accepted to preclude the addition of ingredients that effect the basic and novel features of an invention. In the present invention, the metal component is used to oligomerize both the olefin and sulfur moieties. In both Mazurek and Norris additional components are required to oligomerize olefins and in neither reference is the oligomerization of sulfur moieties envisioned.

Thus, the references either alone or taken together do not fairly suggest the present invention.

Accordingly, it is respectfully requested that the rejection be withdrawn.

It is believed that the present application is now in condition for allowance and early notice of the same is earnestly solicited.

Respectfully submitted,

Date: August 24, 2004

Andrew B. Griffis
Attorney for Applicants
Registration No. 36,336

ExxonMobil Chemical Company
Law Technology
P.O. Box 2149
Baytown, Texas 77522-2149
(281) 834-1886 (Voice)
(281) 834-2495 (Fax)